

Abstract of the Disclosure

08/503,606

Recombinant enzyme libraries and kits where a plurality of enzymes are each characterized by different physical and/or chemical characteristics and classified by common characteristics. The characteristics are determined by screening of recombinant enzymes expressed by a DNA library produced from various microorganisms.

Table 1

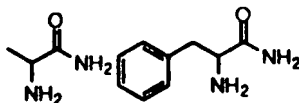
A2

Fluorescein conjugated casein (3.2 mol fluorescein/mol casein)

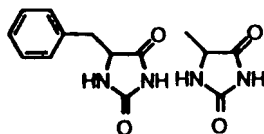
CBZ-Ala-AMC
t-BOC-Ala-Ala-Asp-AMC
succinyl-Ala-Gly-Leu-AMC
CBZ-Arg-AMC
CBZ-Met-AMC
morphourea-Phe-AMC

t-BOC = t-butoxy carbonyl, CBZ = carbonyl benzyloxy,
AMC = 7-amino-4-methyl coumarin

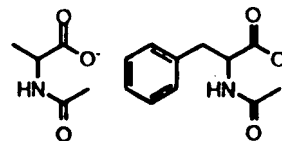
AA3



AB3



AC3



AD3

Fluorescein conjugated casein

t-BOC-Ala-Ala-Asp-AFC
CBZ-Ala-Ala-Lys-AFC
succinyl-Ala-Ala-Phe-AFC
succinyl-Ala-Gly-Leu-AFC

AFC = 7-amino-4-trifluoromethyl coumarin.)

AE3

Fluorescein conjugated
casein

AF3

t-BOC-Ala-Ala-Asp-AFC
CBZ-Asp-AFC

AG3

CBZ-Ala-Ala-Lys-AFC
CBZ-Arg-AFC

AH3

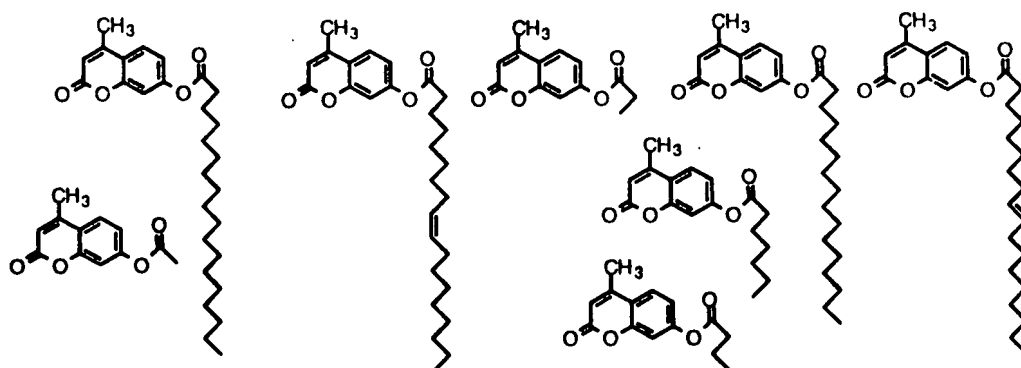
succinyl-Ala-Ala-Phe-AFC
CBZ-Phe-AFC
CBZ-Trp-AFC

AI3

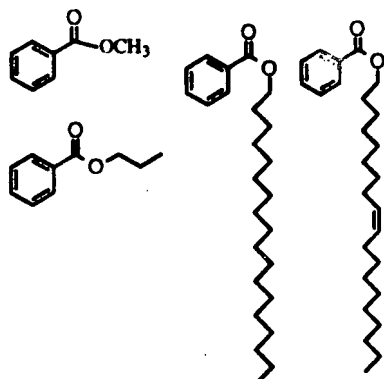
succinyl-Ala-Gly-Leu-AFC
CBZ-Ala-AFC
CBZ-Ser-AFC

Table 2

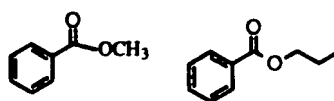
L2



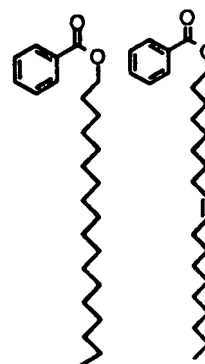
LA3



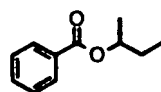
LB3



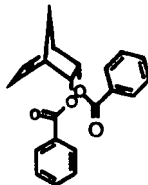
LC3



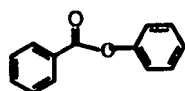
LD3



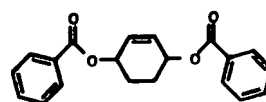
LF3



LE3



LG3



And all of L2

cis

Table 3

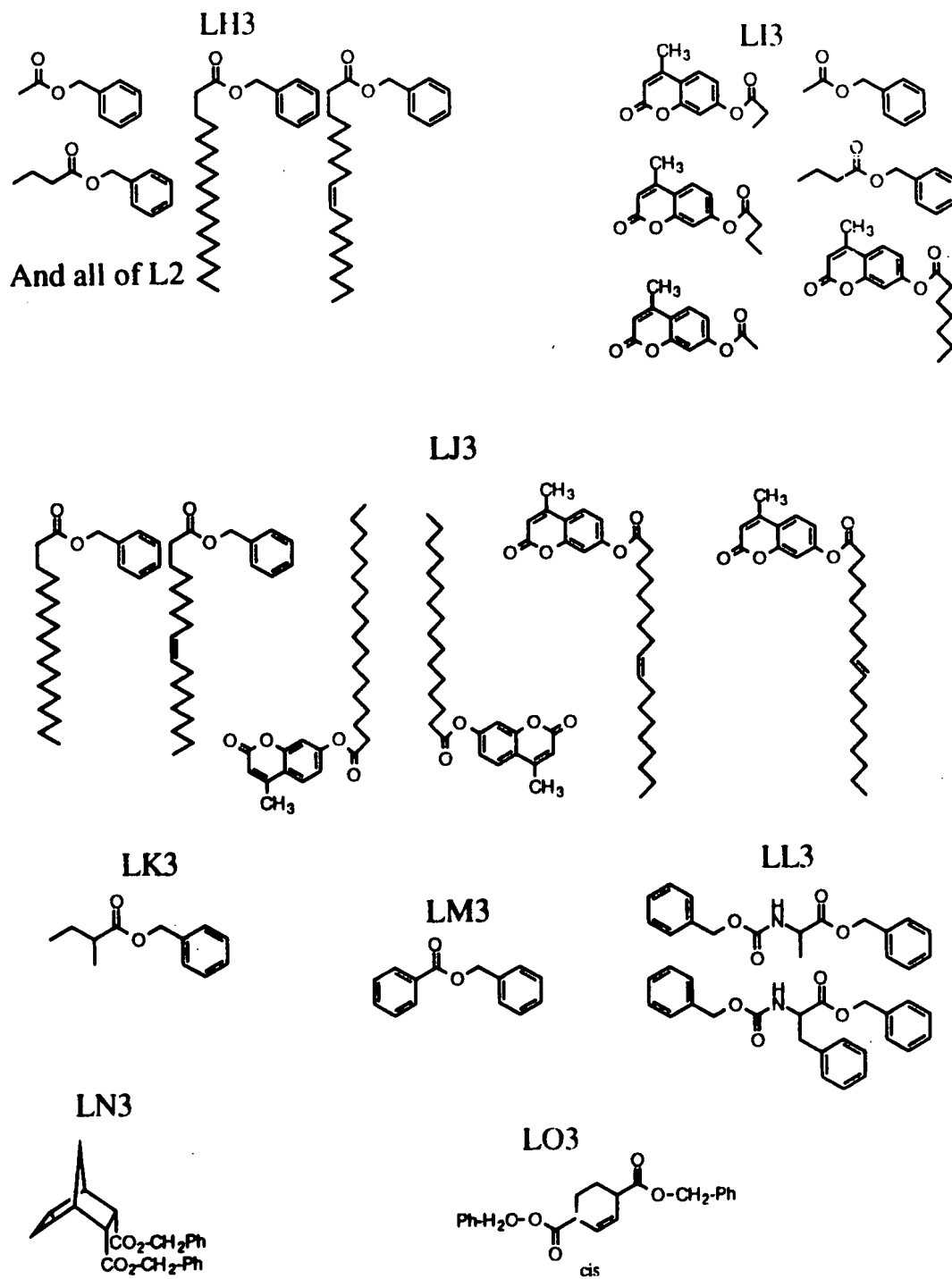
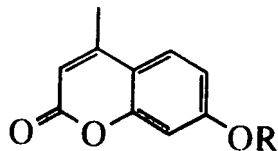


Table 4



4-methyl umbelliferone

wherein R =

G2	β -D-galactose β -D-glucose β -D-glucuronide
GB3	β -D-cellobioside β -B-cellobiopyranoside
GC3	β -D-galactose α -D-galactose
GD3	β -D-glucose α -D-glucose
GE3	β -D-glucuronide
GI3	β -D-N,N-diacetylchitobiose
GJ3	β -D-fucose α -L-fucose β -L-fucose
GK3	β -D-mannose α -D-mannose

non-Umbelliferyl substrates

GA3	amylose [polyglucan α 1,4 linkages], amylopectin [polyglucan branching α 1,6 linkages]
GF3	xylan [poly 1,4-D-xylan]
GG3	amylopectin, pullulan
GH3	sucrose, fructofuranoside